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MEKONG PROJECT

FAO MISSION
for
FOREST AND GRASSLAND FIRE CONTROL

Preliminary Note

by G. Tondeur,

FAO Consultant provided to the Mekong Committee

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Forest and Grassland Fire Control

PRELIMINARY NOTE

by

G. TONDEUR

FAO Consultant provided to the Mekong Committee

This note precedes the report to be made at the end of the Mission.

It has two purposes: (1) to define the proposed guiding lines to be followed in carrying out the study, and (2) to make concrete proposals concerning the overall scheme for a long term action, and also covering several immediate actions of pilot character.

1. TERMS OF REFERENCE OF THE MISSION

The terms of reference of the Mission as determined by FAO are as follows:

"To prepare for the Mekong Coordinating Committee a programme of forest and grassland fire control, including the resettlement of certain populations, for the drainage areas in the four riparian countries, i.e. Thailand, Cambodia, Laos and Viet-Nam, with initial priority in the four tributaries selected as pilot projects."

2. ORIGIN OF THE MISSION: TURBANG REPORT (January 1961)

The Mission originates from the publication of the "FAO Report on forest and grassland Fires in the Lower Mekong Basin. Damage to land and water resources with special reference to the Mekong Development Project" by Mr. J. Turbang, FAO Forestry and Forest Products Division.

The main purpose of that Report was to determine the extent of damages observed and to express them, as far as possible, in monetary terms.

This first Mission, entrusted to Mr. Turbang, originated from the difficulties encountered during aerial photography operations owing to the presence, in certain seasons, of thick smoke coming from huge fires of the natural vegetation.

The Turbang Report emphasized the seriousness of the deterioration due both to fire and to various concomitant factors and affecting forests and soils as well as

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hydrological and hydrographical conditions. This Report called for a logical follow-up: the study of correctives measures to remedy this situation. This study constitutes in turn the present Mission's terms of reference, the latter having been extended in order to cover final practical considerations, i.e. the preparation of a programme of forest and grassland fire control.

3. DISCUSSION OF THE TURBANG REPORT

The terms of reference of the present Mission do not include any further investigations to verify the conclusions of the Turbang Report.

Therefore, the Expert in charge of this Mission considers the conclusions of that Report as accepted. However, he makes the greatest reservations in this regard. In fact, due to incomplete and dissimilar statistical data used by the author for each of the four countries, as well as to divergences in the terminology used by the various parties concerned, the Reporter has not been able to proceed beyond a first approach to the problem. The author of the report had himself drawn attention to those points.

However, after field trips in Thailand and collection of further information, the expert definitely confirms the general conclusions of the previous reporter at least in so far as Thailand is concerned, i.e. the existence of a generalized phenomenon of accelerated deterioration of natural resources in the Mekong drainage area. This conclusion very probably also applies to the other three riparian countries.

The reservations stated concern only the supposed action of certain phenomena and the attempted estimation of annual losses.

4. EXTENT OF DETERIORATION OF RESOURCES

The phenomena observed must be interpreted, not in a static but in a dynamic conception. For several reasons, shown in this Report, their intensity will continue to increase from year to year, because of the cumulative effect of various unfavourable factors, unless remedial measures are taken.

Undoubtedly, they threaten the balanced development of the Mekong Project. In fact, they lead to accelerated deterioration of the potentialities of the zones to be developed by this Project in the fields of forestry, agriculture, water management and energy. The phenomena are all the more serious as this development - in the first period at least - will have to be based to a great extent on the

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marketing and processing of agricultural and forest products.

Hence, there would be a glaring contradiction between, on the one hand, all the means put into use for the harnessing of the river, and on the other, the lack of concern for the conservation of the resources to be developed by that same project.

Further, these phenomena have a more remote and wider repercussion, in the sense that - in the long run - they dangerously jeopardize the prospects of economic and social development of the four countries. In fact, they hasten the destruction of the productive potentialities of forests and soils, leading unavoidably to fatal imbalance between decreasing resources and expanding demography.

5. DISCUSSION OF THE MAIN PURPOSE OF THE MISSION: TO PREPARE A PROGRAMME OF FOREST AND GRASSLAND FIRE CONTROL

The importance given by FAO to this matter having its origin in reports dealing with fire, this factor is predominant in the definition of the Mission's terms of reference. Considered in its literal and narrow sense, this objective is limited to the recommendation of technical methods and laws and regulations for the control of vegetation fire and thereby for the control of deterioration of natural resources.

That amounts to assuming in principle that fire is the sole element which brings about deterioration, or at least, an element which could be isolated from the others, with regard as much to its causes as to its effects, and that its control might be the objective of a special technical programme.

It should be noted in this respect that the Turbang Report already mentioned certain other factors of deterioration of natural resources. The previous experience and local observations of the Expert in charge of this Mission confirm his conviction that all factors of forest and soil deterioration are closely interdependent. It is not possible to control one without dealing with the others. This reasoning leads to a much wider interpretation of the terms of reference of the Mission: conservation and, if possible, improvement of natural resources through the control of all deterioration factors. This is the interpretation adopted by the Expert, who therefore recommends an integrated approach to the problem and justifies his recommendation as follows: among deterioration factors,

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shifting cultivation, overstocking and forest grazing, excessive forest exploitation (legal or illegal), are in the forefront. Though often associated with fire, they can have very serious consequences even without the direct action of fire.

Moreover, fire alone is not a primary cause of degradation - at least in the prevailing ecological forest types of the Mekong basin (i.e. dry Dipterocarp forests, semi-evergreen and evergreen forest). - It has an effect only when associated with other factors. Only pine forests can be seriously affected by direct, destructive action of fire. But pine forests, whatever may their economic future, occupy only an insignificant percentage of the territories considered.

6. SOCIO-ECONOMIC APPROACH TO THE PROBLEM

Analysis of the various aforementioned deterioration factors shows that their primary causes are not fire but the behavious of certain human communities with regard to natural resources upon which they depend for their subsistence and, in some cases, for all or part of their economic activities.

Though the secondary causes of the phenomena observed are ascribable to technics, the primary causes depend on human motivations and attitudes, i.e. economics or sociology, and even psychology.

This consideration goes beyond the problem of resettlement of populations recommended in the terms of reference of the Mission and constituting in fact a social means for fire control.

It rather tends to suggest a socio-economic approach to the whole problem, coordinated with the technical approach.

Indeed, it is obvious that, to produce efficient results, efforts must be concentrated on the primary causes (human factors) and not on the secondary causes (fire, shifting cultivation, etc.).

It is no use recommending technical measures and enforcement of regulations to protect and improve the forests, if both are incompatible with imperative motivations resulting from the way of life of the populations, their subsistence, their only economic possibilities and their demographic expansion.

In consequence, the protection of forests necessitates a profound modification of the attitudes, motivations and behaviour of human communities which are the primary cause of forest deterioration. This involves in particular:

/(i) giving up

(i) giving up the customary practices of shifting cultivation and adoption of new practices;

(ii) giving up customary practices in animal husbandry and adoption of new practices;

(iii) developing new practices to be proposed to the populations and satisfying the sine qua non condition of better remuneration for the farmer's labour and better economic prospects;

(iv) acceptance, by the populations involved, of a new kind of life associated with these practices;

(v) modification and diversification of economic activities, in particular the plant and animal productions that might bring about an evolution in nutritional habits and the opening of new commercial outlets;

(vi) development of employment in the sectors of industry and services, with a view to absorbing the population increase.

7. DISCUSSION OF THE SECONDARY PURPOSE OF THE MISSION: RESETTLEMENT OF POPULATIONS

The Expert believes that this objective can be achieved in two ways.

(i) moving the populations out of the zones to be protected and resettling them elsewhere;

(ii) resettling, or rather settling, the populations in situ within the zone to be protected, according to a formula compatible with the conservation of natural resources.

The first conception is hardly acceptable. In fact, if the wider interpretation of the main object of the Mission is accepted, the problem of natural resources conservation concerns the entire Mekong Basin, and not only certain particular areas of that Basin. Consequently, displacing populations would be merely displacing the problem, unless the resettlement takes place in zones where conservation farming is already being practiced. Such would be the case, for example, of resettling shifting cultivators of the mountains in the rice areas of the deltas and the wide irrigated valleys. However, there would be in this case not only a financial and technical problem (development of new rice-fields) but also demographic and social problems, for it may be feared that the demographic expansion of the rural populations living in the lowlands might lead to a saturation of these lands within a more or less near future and makeit very

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unsuitable to bring in additional populations from outside. Moreover, there are possibilities of ethnical conflicts due to different populations being brought together, or of the nomadic cultivators, in particular those from the mountains, showing a dislike for the new kind of life proposed to them.

Finally, the problem should be considered in its widest scope, and not from the narrow angle of partial achievements. In ot er words, it is necessary to find solutions which still hold when applied to the whole lower Mekong Basin. Therefore, though moving the populations practising shifting cultivation can be a practical solution for the protection and management of a small drainage area, it becomes an economic and social heresy when its general application is considered. The balanced development of the Mekong basin involves in fact the rational development of the potentialities of the highlands as well as of the lowlands, and the diversification of production; neither of those two objectives are compatible with the concentration of populations in the rice fields of the deltas and the large irrigation schemes.

The Expert consequently recommends a system of in situ resettlement of nomadic cultivators in a permanent form of farming. Of course this system may also involve short-distance displacements for the protection of particularly critical areas or for the exploitation of small local hydraulic projects.

This in situ resettlement involves the conversion of extensive farming, destructive of natural resources, into intensive and conservation farming. This will necessarily raise a number of economic, financial, social, and even political problems.

As for the technical aspects, they are far from solved. Everyone recognizes the need, for the conservation of resources, to put an end to shifting cultivation, but, for the Mekong basin, nobody can say exactly what alternative practices would be appropriate to local conditions, apart from irrigated rice cultivation.

To throw light on all these problems, integrated regional studies are necessary. They should be accompanied by pilot operation centres, in view of detailed investigations and experimental implementation of the proposed programmes. Re-orientation and intensification of research in the field of agronomy and forestry as applied to the highlands are also indispensable.

/8. LONG-TERM

8. LONG-TERM PROGRAMME OF WORK

The ultimate purpose of the action considered is the protection and improvement of forests through profound modification of the current methods of agricultural, forest and pastoral exploitation. Such action would have to be implemented in all high-level areas of the Lower Mekong Basin.

Such an ambitious programme can be implemented only by stages, for various financial, economic, technical and social reasons.

By stages means intensive action limited at the beginning to restricted pilot areas to be progressively extended, and not an extensive action progressively intensified, right away covering the whole territory.

Therefore, the Expert recommends the following programme of work:

(i) overall reconnaissance to determine the various regional 'types' or aspects of the problems to be solved, taking into consideration ecologic, demographic, sociologic and economic factors;

(ii) subdivision of the territory into zones presenting similar characteristics;

(iii) selection, for each zone, of a pilot physiographic unit, representative of the characteristic problems prevailing in the zone;

(iv) integrated study of this physiographic unit;

(v) selection, in each pilot physiographic unit, of a pilot sector for implementation with a view to experimental application, development and demonstration of the recommended practices, as well as for the training of officials who will extend the work beyond the pilot sector;

(vi) operation of the pilot sector, coordinated with the integrated study of the physiographic unit, until the practices are finally perfected;

(vii) progressive extension to the whole territory, taking into consideration:

- human and financial resources
- psychological factors (the more or less easy acceptance of the proposed programme by the rural population)
- economic factors:
  - parallel development and diversification of home or foreign markets for agricultural and forest products
  - parallel development of the secondary and tertiary sectors of economy (industries and services), so as to absorb the demographic

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increase while developing and diversifying the home market.

9. INITIAL PROGRAMME

It would have been convenient if the present Mission could have:

(1) covered the following items of the above general programme:
  (i) overall reconnaissance,
  (ii) subdivision into zones presenting similar characteristics,
  (iii) selection, for each zone, of the pilot physiographic unit,
  (iv) selection, per pilot physiographic unit, of the pilot sector for implementation;
(2) made proposals and cost estimates relating to immediate operations covering the following items:
  (i) integrated survey of the pilot physiographic units;
  (ii) set-up and operation of the pilot sectors.

This has not been possible, for the following reasons:

(1) The necessity to broaden the terms of reference became obvious only after the activities of the Mission were started. The Mission was not designed to meet the requirements of these broader terms of reference and therefore had neither the required time nor the staff to follow these logical lines.
(2) The insecurity still prevailing in some parts of the Lower Mekong Basin impeded the action of the Mission.

It must be pointed out that the logical lines of the theoretical programme as outlined above do not exactly comply with the Mission's terms of reference, which implicitly recommend a more or less equal distribution of action in all four riparian countries, with the location of such action to be undertaken by priority in the watersheds of the four pilot tributaries selected for first implementation of hydraulic projects.

Such 'a priori' distribution of operations would lead to locate, in the watershed of each of the pilot tributaries, the integrated survey of one pilot physiographic unit and the set-up of the corresponding pilot implementation sector, without taking into consideration the fact that this may result in duplications (the pilot programmes in one country dealing with exactly the same problems as those in another) while some very important problems might be neglected because they are not present in the watersheds of the pilot tributaries.

/In order

In order to conciliate these various points of view and also taking into consideration both the limited means of the present mission and the conditions of insecurity in some parts of the area, the Expert suggests to proceed as follows:

1. To entrust to a subsequent mission the systematic implementation of the initial programme outlined above;

2. To limit present objectives to partial execution of this programme, in close conformity however with its basic principles;

3. Along these lines - without attempting to carry out a systematic survey leading to the subdivision of the whole area into zones presenting similar characteristics - to select some typical aspects of the problem, applicable to large areas, and propose for each one the integrated survey of a pilot physiographic unit as well as the set-up of the corresponding implementation sector;

4. Not to endeavour for the moment to conform with the principle of a balanced distribution of operations among the four riparian countries, it being understood that it will be the duty of the subsequent mission suggested above to prepare new proposals resulting in a better balance.

10. CONCLUSION

The above considerations indicate that a programme of forest and grassland fire control can be planned only within the broader framework of coordinated control of all factors related to deterioration of forests and soils.

It has also been shown that the investigation and implementation of such an expanded programme require an integrated approach in which social and economic considerations are associated with technical requirements.

The area to be covered by such a programme should comprise the whole highland areas of the four countries, excluding only the lowlands, deltas and areas of large irrigation schemes.

The highlands most often have a prevailing vocation for forestry: they are for the most part covered with forests, which are more or less deeply altered by the action of man, and are in some cases very badly deteriorated.

Moreover, the highlands constitute the watersheds of all the Lower Mekong Basin tributaries, the hydrographic regimes of which are directly connected with the irrigation of the lowlands, energy production, reservoir sedimentation, flood control and inland navigation.

/Therefore

Therefore, the programmes suggested should be directed towards protection, improvement and economic development of forests as well as towards watershed management.

Nevertheless, in order to be really efficient, they must take into consideration the imperative social and economic prerequisites connected with the agricultural and pastoral activities of the local people, who should be allowed to remain on location.

These activities, in turn, will require appropriate organization in order to be implemented without impeding the development of sound forestry and watershed management, while providing better economic prospects for the farmers.

In view of the broadening of its terms of reference, the present Mission will not be able to prepare an overall programme of systematic investigations implementation along the above main lines.

The preparation of such a programme will have to be entrusted to a subsequent mission. In the meantime, the present Mission will recommend the implementation of certain preliminary operations selected in such a way as to fit into the overall programme.

As concerns Thailand the Mission proposes to suggest the integrated survey of a pilot physiographic unit constituted by the watershed of the Nam Soen, an upper reach tributary of the Nam Pong. This unit is representative of conditions prevailing in a vast area of the Korat plateau.

A community development pilot centre including several judiciously selected villages might be suggested within that unit.

The Mission will endeavour to submit similar suggestions for Cambodia and, if possible, Laos and Viet-Nam.

G. Tondeur
Bangkok, 24 December 1961.